

EDITORIAL

This issue I am changing the format of Z88 EPROM slightly. Rather than having a long editorial section, I have started a new area - NEWSLINES - to tell you all the latest news and gossip about the Z88.

The membership of the Club is expanding steadily, helped by our involvement at the recent ZX Microfair (6th Feb) where I also met many existing members. I must thank Mike Johnstone and his team, who organise the Microfair, for once again giving the Club facilities at the show. It seemed busier than ever, and was marked by the appearance of Sir Clive on the Wordmongers stand. He also came to the Club stand very briefly, and expressed his good wishes for the future of the Club.

Another event of the past month was the closure of the other Z88 club, Zeus. Paul Greenhalgh of Scorpio Systems, who started the club at about the same time as ours, decided that his low membership did not warrant producing the Zeus newsletter, so he has transferred his members to this club for the remainder of their subscriptions.

The past month or so has been rather quiet in terms of my receiving contributions for Z88 EPROM. Is there anyone out there who can write something on the use of PipeDream's spreadsheet facilities? I'm afraid spreadsheets aren't really my forte, but I (and I suspect many other members) are very keen to learn. Whatever the subject matter, all contributions are most welcome.

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Over the last few months I have been having problems with members overseas either not receiving their copies of Z88 EPROM at all, or them taking several weeks to arrive. In the past I have sent these magazines by surface mail where possible, as this is considerably cheaper than Air Mail.

I am, however, disturbed by the increasing rate of non-delivery, and so from the 1st March 1988 there will be changes to the overseas subscription rates to allow all overseas members to have Z88 EPROM posted by Air Mail. This basically means splitting the subscription rates into more categories, reflecting the respective costs of sending by Air Mail.

Existing subscribers will have the remainder of their issues posted by Air Mail. Despite an increase in printing costs, the U.K. subscription remains unchanged.

From 1/3/88	3 Issues	6 Issues	Back Nos
U.K./BFPO/C.I.	£3.50	£6.00	£1.00
Rest of Europe	£5.00	£9.00	£1.50
Middle East	£6.00	£11.00	£1.50
America & Africa	£7.00	£12.00	£2.00
Elsewhere	£8.00	£14.00	£2.00

All payment MUST be in Pounds Sterling. Cheques MUST be drawn on a U.K. bank. Overseas, a Bureaux de Change can arrange Sterling cheques.

NEWSLINES

** By the time you read this, CC should have a 512k RAM card available for the Z88. They showed a prototype at the Which Computer? show, and are just waiting for production chips. The catch? Expected price is £199 (ouch!) but expect it to drop in time.

Half-megabyte EPROM cards are also expected shortly. Both half-meg sizes are being introduced because the 1-meg production chips are taking longer to develop than was expected. Even so, three half-meg cards would give you a RAM capacity of 1568k!!

** The first edition of Z88 User Magazine will be published around the end of March. It will be a monthly publication, but will be available only by subscription for the first few issues. If you would like to receive the first issue free, with an invitation to subscribe to further issues, write to Focus Magazines at: Z88 User, Greencoat House, Francis Street, London. SW1P 1DG.

** Cambridge Computer now sell the 'official' Z88 carrying case - black padded pvc, with a Nylon zip around three sides. This means you can open the case and use the Z88 while it is still inside. In the bottom of the case are six compartments which can be used to store either EPROM cards or a set of batteries. The case is available from most Z88 retailers, for £10.

** A new adventure is now available for the Z88. Called 'The Withered Toad', it is a beginners adventure based around an underground labyrinth. Supplied on a 32k EPROM, at £24.95

you can afford to wipe the card to use it for storage should you become bored with the game. Available from Wordmongers, members can claim their normal 10% discount.

** The Z88 Modem from Miracle Systems has yet to materialise. I have spent the last few weeks trying to borrow one to review, but it would appear that none have been made yet, and there may be some production difficulties. Hopefully Miracle will get their act together before someone else jumps in with a similar product.

** MacLink is a new file transfer package working between the Z88 and the Apple Macintosh. Available from C-Port, who also do a version for the Amstrad PCW machines.

** Rumours of a Z88 disk drive in the pipeline. I hear that the hardware is coming on well, using a 3.5" disk and plugging into the Z88's RS232 port. The operating software will be supplied on a ROM card. No prices or further details yet, and although I cannot say who is working on the project at the moment, as they say, 'watch this space'.

** The new CC 'official' modem should be available soon. The 1200P modem is about the size of a packet of cigarettes, and works at 1200/1200 or 300/300. Price should be around £149, and may include some comms software at that price. I am not sure what will happen to those people who ordered (and paid for) the original modem at £99 - perhaps CC will give them the new modem as compensation for their long wait!

** My moles tell me that the long awaited Advanced User Guide from Trinity Concepts will be out around the end of March. Let us hope that it will contain all the details about the Z88 memory map, operating system etc.

MEMBERS' LETTERS

Charles Schofield (0126)
Bromley, Kent

Dear Roy,

Having used the spreadsheet facilities on the Z88 for a while now, I have come across a serious problem which affects the merging of multi-column documents.

I had prepared some monthly figures, using separate spreadsheets, which I wanted to consolidate to produce year-to-date figures. I thought that one way to do this would be to load each of the separate months into a new spreadsheet and then add them up.

It was while trying this that I found that PipeDream was introducing spurious blank columns. As an example, if you use the replicate function to produce a spreadsheet with the word 'example' in each of the slots from A1 to D20; save a copy of this as 'EG', and then try to load 'EG' at A21, you should see what I mean. Slots C21-C40 are blank; this block of text having been loaded at D21-D40, and the block which should have gone to D21-D40 is instead at G21-G40.

I would be interested to hear if anyone else has come across other 'undocumented program features' in PipeDream.

I have a few other queries on which I would be grateful for any help or information:

Has anyone with a 2.2 ROM managed to get the multi-file document feature to work, as described on page 111 of the manual? I have spent a lot of time on this and have got nowhere.

Does anyone know when the 1MB RAM cartridges are going to be available, and will they plug into the existing cartridge slots?

Have any technical details on the operating system, memory paging mechanism and system addresses been published anywhere?

(For multi-file documents see Neil Preedy's article on page 24. See Newslines for details of RAM cards, and yes they will plug into the 3 expansion slots. Hopefully the technical details you want will be in the forthcoming Advanced User Guide. - Ed)

John L. Dobson (0163)
London

Dear Editor,

Thank you for the latest issue of Z88 EPROM which arrived this morning. I am very pleased to note that you are keeping up the high standard of earlier issues! (Flattery will get you everywhere! - Ed)

I was particularly interested to read the letters from people experiencing software problems as my own machine (SCI 002958 - a CC replacement for Thorn-EMI 061-000075 which locked up completely a few days after upgrading to version 2.2 last September) exhibits much

the same intermittent fault as you describe on page 4. On all but one occasion this has happened when the machine has been transported to or from the office and usually takes the form of it refusing to switch on again until a soft reset is done. As I work in central London and travel in and out from my home near Wimbledon by electric train I had wondered whether stray electric fields might be the culprit, but the problem occurs so irregularly that this is unlikely.

However it does seem to happen most often when the machine is allowed to get cold during the journey - especially if the batteries are getting low. Are the Z88's circuits particularly temperature sensitive? If they are, then an insulated carrying case as described on page 14 would probably cure the problem. In the hope that this will work I propose to keep my machine well wrapped up for the rest of the winter!

However, the problem on my machine does seem to be rather more serious than that which you describe as, on a couple of occasions, even a hard reset has failed to persuade it to switch on. The only recourse in this situation appears to be to remove the batteries, and any EPROMs fitted, and to allow the machine to 'rest' for an hour or so (to allow the internal capacitor to become completely discharged) before performing a complete new start-up as described in the front of the handbook. This is inconvenient to say the least, and I would certainly be interested in any comments which other readers (and CC) have to make about the problem.

Incidentally, at the office I print out documents on a C.Itoh daisywheel printer,

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fitted with a serial interface, which is configured for use with the Thorn-EMI 'Liberator' portable word processor issued to the Civil Service. The Epson driver works without alteration on this machine but will not support either bold or underline commands.

(After contacting CC about the problems with my machine, Michael Dunbar of their technical dept. asked me to return my machine for replacement, as the problems were due to a hardware fault. I would suggest any member experiencing similar problems should contact CC. My replacement machine is a Thorn-EMI serial no.072-000691, and so far seems to work perfectly.

With regard to your daisywheel printer, I would suggest you try the printer driver for Diablo/Ricoh in Vol.1 No.1. - Ed)

Chris Robinson (0131)
South Croydon

Dear Roy,

Thanks for your help at the Microfair yesterday. Whereas I was achieving Z88 to QL file transfer satisfactorily, I wasn't managing to achieve the reverse and suspected the machine. It was, however, as you suggested, a fault within the RS232 lead (the link between pins 7 & 8 being unsatisfactory).

Now I am transferring files to and from Z88 and QL by various means. I have a copy of Phil Borman's excellent program, but in case anyone

hasn't, it is possible to transfer files between Quill and PipeDream quite easily by the following methods:

PipeDream to Quill:

Place a formatted cartridge in QL microdrive 2. From SuperBASIC type the direct command:

```
COPY SER1 TO MDV2_FILENAME_EXP
```

The microdrive whirrs.

From PipeDream, give commands as if sending the file to the printer (ie. Diamond PO).

When the flashing cursor returns, press Shift and Space on the QL. After more whirring of microdrive, the file will exist ready to import into Quill in the normal way.

Quill to PipeDream

A printer driver should be set up (using Install_bas) on a copy of the Quill cartridge that has as preamble codes ESC,N,ESC,F, and as post-amble codes ESC,E,ESC,Z.

On the Z88 either enter the Imp-Export software using Square X, select (R)ecieve and provide a filename of your choice, or select the Terminal software via Square V and press Square+S to copy the incoming signals into a temp file.

From Quill, give the normal commands as if to send the document to a printer and it will be sent straight into the Z88 instead.

(If using the Terminal software, remember to use Square-S and Shift+Enter to close the file and return to the Index.)

I hope these techniques will be of some use.

John Mack (0241)
Solihull

Dear Roy,
Here are some notes for the newsletter if you've not already covered them:

Flat batteries & rechargeables

1.1 The charger & batteries from Sector Software took ten days, which seems a good service (and post, too for December.)

1.2 High St chargers, including Ever Ready batteries, are cheaper (by up to £4). Also rechargeables in the electronics mags seem cheaper.

1.3 The Powerlab batteries supplied by Sector Software lasted only ten days of negligible non-mains use from their first eight hour charge. There were no instructions, apart from a label's 'charge time maximum 8 hours'- but is that the time taken or allowed? Subsequently, a 21 hour charge left the batteries and the charger slightly warm, and at 1.38 volts. So far I've had 7 days of intense, non-mains use.

1.4 Before I spotted the BAT LOW the display became suddenly lined, then vanished. It reappeared with both shifts but vanished with any attempted action. However, these actions were completed - even <>FS - which is reassuring.

1.5 Earlier, with alkaline batteries and with BAT LOW signalled, the printer was driven correctly and without any lining on the screen.

(Ni-Cd batteries do 'die' rather more quickly than conventional cells, which would explain why you didn't notice the BAT LOW symbol. - Ed)

QUERIES, HINTS & TIPS

David Wornham 0120

Have any other members had any success in linking the Z88 to the ZX Spectrum Opus Discovery disk drive.

Chris Rogers (0246)

When I set up the Z88 to run my Citizen 120D printer, it gives double spacing. When I stop this with the PrinterEd command "Allow Line Feeds - N", the printer then receives no carriage returns, and prints everything on one line. I can correct this with a dipswitch in the printer, but this spoils my default BBC setting, which then has to be corrected with an FX command each time I wish to use the BBC. The only other thing is to change the printer dipswitch setting each time, but this can't do it any good in the long run. Can this be corrected in the Z88 PrinterEd?

(Several other members have written about this problem, and it appears to be due to a bug in the 2.2 ROM. I will ask CC if there is a fix for the problem. - Ed)

John Harris (0037)

On the point of using the Z88 with batteries, don't be frightened into putting new batteries into the machine as soon as the battery warning appears. I have carried on using my Z88 for as long as another 2 hours without damage, when the display goes blank. Pop in a new set, and everything is still fine.

(The Z88 seems to have a built-in safety feature - it will never let you discharge batteries to the extent that you lose RAM contents, and when things get near this danger point, the screen simply blanks out. - Ed)

Keith Lawrenson (0157)

When using PipeDream's spreadsheet facilities, I have found conditional expressions of the type - IF (A1=1,B1,C1) to have hidden dangers. If a small mistake is made, and an ERROR message such as 'TOO FEW ARGUMENTS' gets into B1 or C1 the keyboard "locks up". If a 'PROPAGATED ERROR' gets into B1 or C1 the machine 'soft resets' itself! This has caused a lot of headaches, and reinforces the need to be extra careful to check all is o.k. before entering.

Ronnie Mackay (0168)

I have recently been trying to get a Buzzbox modem to work with the Z88 at 300 baud. After much experimentation, here are the connections I used:

Buzzbox modem	Z88	
1 -----	2	Also link
4 -----	3	pins 5 & 9
2 -----	7	on the Z88
5 -----	8	connector

You should set your panel to 300 baud, and save it under the name modem for future use. To test if your terminal is working join the following pins together:

2--to--3 4--to--5 8--to--9 then you should get any keyboard output to show on the screen. Remember to reset the Panel to the correct settings for your printer, or you will most likely get garbage printed out the next time you use it.

Having recently filled in a questionnaire from CC I received FREE the excellent carrying case from them, hopefully it will be available for other members. (See Newslines - Ed)

I use my Filer with an extra 32k RAM card as device 1, but it reverts back to device 0 from time to time - is this some fault?

(I use a 128k RAM as device 1 and have not had this problem. Perhaps OZ switches the device automatically when device 1 is full? Any ideas anyone? - Ed)

I cannot use my ROM in slot 2 - all I get is 'Cannot Satisfy Request'?

(I presume by ROM you mean EPROM cards. These can only be written to or read from in slot 3, so always leave this slot free for EPROM. - Ed)

READY - STEADY - GO

By David Hambly (0173)

In the November issue of Personal Computer World was a free wallchart depicting extensive benchmark listing results, of both and business computers. Surprisingly, the Z88 was included in the list. So perhaps fellow club members might be interested in how clive's new baby fared when compared with other Z80 based computers.

Before I continue, some might not know exactly what benchmark testing is. So here is a brief explanation. Benchmarks are generally short programs designed to test the computer's processing speed. Each computer is timed using the same program, and an average is obtained. Although some of the programs appear very basic in structure, it is not the way they are written that is important.

There was a total of seven tests, of which the Z88 could only run four, the listings for which

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are given at the end of this article. The four timings are shown in the table below, the fastest computer being at the top of the list, working down to the Memotech. The Tatung Einstein was tested by PCW with two types of BASIC. It is interesting to note that one is a Z80 BBC version, as supplied on the Z88.

Test One: - INTEGER MATHS (Whole numbers)
 Test Two: - REAL MATHS (Floating point numbers)
 Test Three: - TRIGLOG (Complex numbers)
 Test Four: - TEXTSCRN (Print text speed)

MODEL	INT MATH	REAL MATH	TRIG LOG	TEXT SCRN
EINSTEIN				
BBC BASIC	8.2	7.2	48.5	104.7
Z88				
BBC BASIC	11.8	10.2	62.0	63.0
EINSTEIN				
XBAS BASIC	9.0	8.8	44.6	169.0
ZX SPECTRUM				
BASIC	--	17.5	226.5	84.0
MEMOTECH				
MTX512 BASIC	--	9.6	66.4	114.5

```

10 REM INTMATH
20 PRINT "START"
30 X=0
40 Y=9
50 FOR I= 1 TO 1000
60 X=X+(Y*Y-Y)/Y
70 NEXT I
80 PRINT "FINISH",X
    
```

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```
10 REM REALMATH
20 PRINT "START"
30 X=0.0
40 Y=9.9
50 FOR I= 1 TO 1000
60 X=X+(Y*Y-Y)/Y
70 NEXT I
80 PRINT "FINISH",X
```

```
10 REM TRIGLOG
20 PRINT "START"
30 X=0.0
40 Y=9.9
50 FOR I= 1 TO 1000
60 X=X+SIN(ATN(COS(LOG(Y))))
70 NEXT I
80 PRINT "FINISH",X
```

```
10 REM TEXTSCRN
20 PRINT "START"
30 FOR I= 1 TO 1000
40 PRINT "1234567890QWERTYUIOP",I
50 NEXT I
60 PRINT "FINISH"
```

By adding the following lines, the Z88 will time itself:

```
15 TIME=0
90 PRINT TIME
```


MORE ON UNDOCUMENTED FEATURES

By Phil Borman (0143)

Following the "undocumented features" letter from Ian Foot (0205) in the past issue of Z88 Eprom, I would like to add a few more entries to his VDU 1 list.

It is possible to send several VDU 1 commands together, by printing a string, the first character being the number of parameters as ASCII code. The second character can be used to switch ON or OFF with +-
ie VDU 1:PRINT "4+LTU" will set "small underlined capitals", or
VDU 1:PRINT "4+LTUtitle" will print the text "TITLE" in small underlined characters.

The mode is not cancelled automatically, so do VDU 1:PRINT "4-LUT" to get back to normal. You can send the same command as
VDU 1,ASC"4",ASC"+",ASC"L",ASC"U",ASC"T" or
VDU 1,52,43,76,85,84 or PRINT CHR\$(1)"4+LUT"
etc.

Three further VDU 1 commands are: "#", code 35, which creates a window on the Z88 screen, "I", code 73, which initialises a window, and "J", code 74, which justifies text. All take multiple parameters. "#" takes 5, with an optional 6th, "I" and "J" take one each. ie
PRINT CHR\$(1)"2JC" prints centre justified text. Use "JL" for left, "JR" for right, and "JO" for Justification off. If justification is left on, directly typed text prints each letter twice. PRINTed text is justified correctly.

Parameters for "#" are more complicated, and CLS or an "I" command is used to display the results. The first parameter is the ASCII channel number, ie 51 or ASC"3" for channel 3.

The next 4 parameters define the window position as follows: x position of top left corner+32, y position of top left corner+32, width of window+32, height of window+32, then optional extra parameter to define "border".

Use 0 for no border, or only send 5 parameters. Use 1 for a vertical line in the left and right margins, and use 3 for the lines plus a half character wide block at the top - useful for menu header text. See later. ie

```
VDU 1,ASC"7",ASC"#",ASC"1",32,32,32+80,32+8,0
and VDU 1,ASC"6",ASC"#",ASC"1",32,32,32+80,32+8
both define channel 1 window to be 80
characters wide, 8 high, at position 0,0 while
VDU 1,ASC"7",ASC"#",ASC"2",
32+81,32,32+12,32+8,3
```

defines channel 2 window to be 12 characters wide, 8 high, positioned one character to the right of window 1, with a line and block border. If you then print a 12 character string in reversed text in the top line of this window, you get a header similar to those used in the built in Z88 programs.

To use the new windows, or see the results, you need to Initialise them, which puts a cursor in them, and sends any PRINT commands to the current window. This is done with "I", ie PRINT CHR\$(1)"2I2" will initialise window 2 defined above.

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As a demonstration, type in the following program and run it, which will print a Z88 style header in the graphics area.

```
10 VDU 1, ASC"7", ASC"#", ASC"2", 32+81, 32,
32+12, 32+8, 3
20 VDU 1:PRINT "2I2":CLS

30 PRINT CHR$(1)"4+TLR Diary Date "CHR$(1)
"4-TLR"CHR$(1)"2I1"
```

The "4-TLR" and "2I1" just reset everything again.

PROGRAM: TEXT IN BBC BASIC

By Neil Preedy (0137)

The following BASIC program demonstrates the use different text styles accessed using CHR\$(1) commands:

```
10 CLS
20 RESTORE
30 av%=0
40 PRINT CHR$(1);CHR$(85);"TYPING
TEST";CHR$(1);CHR$(85)
50 PRINT
60 READ num%
70 FOR loop%=1 TO num%
80 PRINT CHR$(1);CHR$(102);CHR$(1);
CHR$(84);"PRESS ANY KEY TO CONTINUE";
CHR$(1);CHR$(84);CHR$(1);CHR$(102)
85 K$=GET$
90 READ text$,w_num%
100 PRINT CHR$(1);CHR$(103);"Type in
the following sentence:";
CHR$(1);CHR$(103)
```

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```
110 PRINT CHR$(1);CHR$(98);text$;  
    CHR$(1);CHR$(98)  
120 TIME=0  
130 FOR key%=1 TO LEN(text$)  
140     key$=GET$  
150     IF key$=MID$(text$,key%,1)  
        THEN PRINT key$; ELSE key%=key%-1  
160 NEXT key%  
170 t%=TIME  
180 t%=60/(t%/100/w_num%)  
190 av%=av%+t%  
200 PRINT"Your speed was ";CHR$(1);  
    CHR$(82);t%;CHR$(1);CHR$(82);"w.p.m."  
210 NEXT loop%  
220 PRINT  
225 av%=av%/num%  
230 PRINTCHR$(1);CHR$(105);"Your average  
    speed was ";CHR$(1);CHR$(105);  
    av%;"w.p.m."  
240 :  
250 :  
260 DATA 2  
270 DATA THE QUICK BROWN FOX JUMPS  
    OVER THE LAZY DOG,9  
280 DATA THIS IS TYPED ON A CAMBRIDGE  
    COMPUTER LTD Z88,9
```

SOFTWARE REVIEW - Z-TERM TERMINAL PACK

Z-Term is one of the first commercially available software packages for the Z88, and it really is a marvellous demonstration of how third-party software can be completely integrated into the Z88 system. I will talk about the features and facilities it offers later, but first I must describe what I mean by this software integration.

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The package is supplied on a 32k ROM card - in fact an EPROM card with a label over the erasure hole. The Z88 does however acknowledge it to be a ROM on the CARD display (◇CARD from the Index). The ROM can be plugged into any of the Z88 expansion slots, and I chose slot two. Inserting the card should be done from the Index display, as is the case with any card.

When the machine is turned back on, nothing is obviously different. However, if you scroll to the bottom of the Application list on the left side of the Index, at the bottom you will find

Z-Term Q

The package now behaves just as though it were one of the Z88's resident applications - you can have several copies suspended if you wish, and you can use the short-form Q to activate them. If you remove the Z-Term ROM while you have Z-Term suspended, the Z88 immediately emits a continuous beep to tell you to replace the card.

The other refreshing thing about this software is the on-line Help and Menu facilities. Pressing the Help key at any time when using the software brings up a comprehensive help screen covering the command you were using at the time you pressed Help. This is just the way the Z88's resident Help facility was designed to work, but unfortunately the writers ran out of ROM space and could not implement it fully. This is why when you press Help from say, the Calculator, all you get is a blank page. In a similar way to PipeDream, the software can either be fully Menu driven, or you can use ◇ short cuts.

And so onto the facilities of the package. At the most general level, Z-term gives the Z88 two types of terminal - a scrolling terminal, as you would use for example with Telecom Gold, and a Viewdata terminal, which you might use with Prestel and the like. You select which of the two terminal types you require, plus a host of other options, from the Configure Menu.

From here you can select the baud rate and Parity/Bits, tell the software the type of modem you are using (either DUMB, HAYES compatible or MIRACLE Systems), and also edit a list of up to five autodial numbers, and five function key strings.

The last two facilities are very useful: If you are using an autodialling modem you can store up to five telephone numbers - your most regularly used services - and the modem will autodial them at the press of a single key.

Similarly, you can store a string of up to 32 characters on each of the function keys \diamond A to \diamond E. These might be customer ID's, other log-on sequences, or regularly used page numbers on a Viewdata service such as Prestel.

Once you have configured the package to suit your regular requirements, the software automatically saves a data file, called ZT.DAT, to the current device, and this data is loaded into the package each time you select it. The program also automatically sets the baud rate and parity on the Panel, but unfortunately does not reset the previous settings when you have finished.

When you are actually on-line, Z-Term offers several facilities to make life easier. In the scrolling terminal, you may record a call to RAM - simply pressing \diamond FT sends anything that appears on the screen to your file. This may be loaded into PipeDream at a later date. Similarly, to save connection charges, you can prepare a message in PipeDream while off-line, save it as Plain Text, and then once you are on-line send the file using \diamond FL.

I mainly used the software to access Prestel, and soon got used to the fact that the 24 line Viewdata screen is split into thirds. You can move about the screen to view either top, middle or bottom using \diamond ↑ and \diamond ↓. Graphics characters are not shown, instead an asterisk (*) is substituted where each graphic would normally appear. To make the selection of page numbers easier, rather than having to use Shift 8 and Shift 3 for * and #, the program redefines the TAB and £ keys to produce these characters.

While on-line to a Viewdata service you may save pages to RAM using \diamond K - this saves pages to a file called PRESDATA.DAT which can be loaded into PipeDream for viewing. If you know someone with X-MODEM file transfer software, Z-Term will send and receive files using this popular transfer protocol.

In use the software performed faultlessly. I evaluated the system using a Protek acoustic coupler, classed by Z-Term as a dumb modem. The comprehensive nature of the commands available, together with the fact that it is fully menu-driven, make Z-term a joy to use.

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The full Help facility is always there, and when compared to the Help built into the resident Z88 applications, is positively over-helpful! Z-Term comes supplied with a 26 page A5 manual, which includes a 'quickstart' first time user guide.

Two omissions that spring to mind both regard the Viewdata terminal: It lacks the ability to prepare mailboxes off-line, which is a shame. It also lacks any facility to download software from, for example, Micronet 800. Although there is nothing at the moment to download, with the formation of the Double 8 area for the Z88 I'm sure some will appear soon.

Don't be put off Z-Term by its price. Even though it may seem expensive compared to other software on cassette or disk, you must remember that the media - a 32k EPROM card - costs £20. This is unfortunately the price we Z88 users must pay for the convenience of solid-state software.

Thanks to Wordmongers Ltd for the loan of the review package.

PRODUCT: Z-TERM TERMINAL PACKAGE

SUPPLIER: WORDMONGERS LTD
21, Edison Road, Rabans Lane,
Aylesbury, Bucks. HP19 3TE
Tel: 0296 437878

PRICE: £49.95 (Members may claim their 10% Club discount on this price.)

MULTI-FILES FOR PRINTING

By Neil Preedy (0137)

A use for multi-documents is in printing out several documents without having to load them up each time.

Just type in the name of each document. Then save it as Plain Text under the name of say, "print.1" (See page 111 of the user guide.) Now load up the document "print" (miss out the .1). This automatically gives you the first document in the list. If you now print out the document, then all the other documents in the list (page 127 'Wait between pages') will be printed.

One thing that should be pointed out, is that the files will merge as one. If there is a gap at the bottom of the first file then the next file will place some of its text there. To overcome this every file should have a page break at the end (◇ ↓ ENTER ◇ EIP ENTER ↓ ◇Y). To make sure that all the page numbers are correct for each document the Start Page on the Options menu of every file should be set to the required number.

If a layout file is used then the file can be set up to incorporate this. Warning - to not forget to set the Panel timeout to zero, otherwise the printout will stop printing when the timeout is reached. This facility can also be used to print out several copies of the same document, just by copying them in a list the amount of times needed. It is advisable to use a power supply!

Wordmongers Ltd.

21 Edison Rd., Rabans Lane, Aylesbury, Bucks. HP19 3TE

Tel.(0296) 437878. Prestel 029634822. Telecom Gold 84:WOT001

Terminal Software

There are currently three varieties of this suite available for the Z88.

The three versions are:

G-term.

Wordmongers' G-term is a variant of Z-term specially tailored for easy access to Telecom Gold and the other parts of the international Dialcom network. Wordmongers' G-term for the Z88 incorporates most of the features of Z-term, as described above, with the additional benefit of automatic log-on to Telecom Gold.

G-term Features:

- Hayes, Miracle systems and dumb MODEM compatible.
- File transfer using X-MODEM.
- ASCII text file capture and transmission using XON/XOFF flow control.
- Autodial directory facility for 5 numbers.
- Automatic log-on to Telecom Gold when connected directly or when connected via PSS.

G-term is £49.99 per copy inc. VAT.

Z-term.

Wordmongers' Z-term is a comprehensive terminal package for the Z88.

Z-term Features:

- Prestel and teletype.
- Hayes, Miracle systems and dumb MODEM compatible.
- File transfer using X-MODEM.
- ASCII text file capture and transmission using XON/XOFF flow control.
- Autodial directory facility for 5 numbers.
- 5 user defined function keys.

Z-term is £49.99 per copy inc. VAT.

M-term.

Wordmongers' M-term is another variant of Z-term tailored for the Mercury 7500 electronic mail system. Wordmongers' M-term for the Z88 incorporates most of the features of G-term, as described above, with the additional benefit of automatic log-on to Mercury 7500.

M-term is £49.99 per copy inc. VAT.

For further information contact your local dealer.

10% DISCOUNT TO CLUB MEMBERS (EXCEPT MODEMS)

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PPS Terminal software –
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Wordmongers' TX file transfer system.

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TX has been in use for over 5 years.

TX is supplied for the pair of machines required. This pack contains the disk or cartridge for each of the pair to be linked, a manual and a cable.

A TX pack for a pair of machines, one of which is the Z88, is £99.50

Wordmongers software is licensed not sold. The full details of the software licence are available upon request from Wordmongers Ltd.

Prices are valid from January 1988 and include VAT at 15%. Postage and packing must be added to the amount you send at the rate of £2.00 for letter or parcel post.

Access and Barclaycard accepted.

MODEMS

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Terminal Software

Z-term – General purpose with X-MODEM and user defined function keys.

P-term – Wordmongers' PPS terminal.

G-term – Telecom Gold terminal.

M-term – Mercury 7500 terminal.

All terminals cost £49.99

BASIC PROGRAM: PASSWORD

By Phil Borman (0143)

This short program gives you the option of encrypting files to prevent unauthorised access.

Just run the program, and it will prompt you for the name of the file you wish to protect. You will then be asked for a KEY CODE between 1 and 255.

After processing the file the program comes back with "DONE", and though you may still load the file, it does not make any sense.

De-coding is done by passing the file through the program a second time, using the same KEY CODE.

```
10 *NAME PASSWORD
20 INPUT "FILE TO CODE ";FILE$
30 A=OPENUP(FILE$)
40 IF A=0:PRINT "FILE ERROR":RUN
50 INPUT "KEY CODE ";KEY
60 IF KEY<0 OR KEY>255:PRINT "KEY ERROR":RUN
70 REPEAT
80   CHAR=BGET#A
90   CHAR=CHAR EOR KEY
100  PTR#A=PTR#A-1
110  BPUT#A,CHAR
120 UNTIL EOF#A
130 PRINT "DONE"
140 CLOSE#A
```

MICROSPACING IN PIPEDREAM

By Simon Phipps (0221)

The manual is unclear about this but I have established by experiment what extra information is required to make this work with Diablo 630 compatible printers. I will explain how the facility works and include the extra information.

To microspace justified text, it is necessary in the PrinterEd to enter the codes used by your printer to change the amount by which the print-head is moved after each letter. During printing, PipeDream constructs codes between each word so that the text exactly fills the line. The code output is:

<Prefix> N <Suffix>

where <Prefix> is the code entered on the HMI Prefix field on page 2 of PrinterEd, <Suffix> is the code in the HMI Suffix field and N is the space value in 120ths of an inch. The HMI Offset value is added to N each time it is calculated.

To print a document, give the <>PM command and answer Y. You are now able to enter the default pitch in 120ths of an inch; this value is output to reverse the variable spacing commands. On a Diablo 630 printer, the coded I used were as follows:

HMI Prefix: ESC,US

HMI Suffix: (none)

HMI Offset: 1

Z88 EPROM - MAR-APR 1988

After <>PM, the codes to be entered are:

8 pitch	15	
10 pitch	12	(this is the default)
12 pitch	10	
15 pitch	8	

REVIEW OF Z88 CARRYING WALLET

Having heard rumours of the launch of a case for the Z88, and realising that these days all I ever use when travelling is my computer, I rang up and ordered a carrying case.

It arrived (miraculously, seeing as it was the week before Christmas) the next day, and was soon pressed into service.

It is a dark grey plastic case made to exactly fit the Z88. It is lined with padded synthetic fabric and is closed by two zips. There is a padded carrying handle and inside the lid are six pockets which will hold an EPROM or a set of batteries.

The overall finish is rather poor, with badly cut material and bad stitching and I would say that the price I paid was much too much (nearly £13 including postage). Either CC must improve the product, or reduce the price, or give it away free, because no discerning punter should buy it unless they don't mind paying the earth for a case to make their computer look cheap and nasty.

HOST SOFTWARE

I have a file management package in Pascal available for the BTOS/CTOS operating system (used on Convergent Technologies/Unisys distributed computers) which allows you to dump

the contents of a Z88 via eXport and then list a directory and extract individual files on the host. You can also transmit individual files from dumps back to the Z88. Please send return postage and a formatted 5.25" disk for source & run file (or I could do file transfer if you ring me...).

MAILBOX DIRECTORY

How about a members directory of mailbox numbers? I assume many Z88 users have telecom access.

Simon Phipps (0221) Phone Southampton 550037

Telecom Gold mbx NTG339

Opus Matrix mbx on Node 506/80

(Harsh words indeed from Simon about the CC carrying case. I bought one at the February Microfair and thought it wasn't too badly made. Maybe the quality has been improved since Simon bought his. What do other people think? More from Simon in the next issue, on mail-merging with PipeDream. - Ed)

PROGRAM: THREE CARD MONTE

By David Hambly (0173)

This is based on the old Mississippi river boat con-trick, also known as Find The Lady.

```
10 CLS
20 PRINT TAB(24,0);"DAVID HAMBLY'S
   THREE CARD MONTE"
30 B$=CHR$(200):A$=B$+B$+B$+B$+B$
40 D$="      ":REM 4 SPACES
50 C$=A$+D$+A$+D$+A$
```

```
60 FOR A=2 TO 6
70 PRINT TAB(26,A);C$:NEXT
80 PRINT TAB(28,4);"1"
90 PRINT TAB(37,4);"2"
100 PRINT TAB(46,4);"3"
110 A=INT(RND(3))
120 PRINT TAB(0,3);"PICK A CARD"
130 PRINT TAB(0,4);"1-2-3"
140 W$=GET$:IF VAL(W$)<>A THEN GOTO 180
150 IF A=1 THEN PRINT TAB(26,4);
    "QUEEN":GOTO 200
160 IF A=2 THEN PRINT TAB(35,4);
    "QUEEN":GOTO 200
170 IF A=3 THEN PRINT TAB(44,4);
    "QUEEN":GOTO 200
180 PRINT TAB(0,6);"WRONG"
190 GOTO 210
200 PRINT TAB(0,6);"RIGHT"
210 FOR Z=1 TO 2000:NEXT
220 RUN
```

SMALL ADS

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SERIAL TO PARALLEL EXTERNAL INTERFACE - TOP
QUALITY (SMITH CORONA) WILL CONNECT ANY
PARALLEL PRINTER TO Z88 WITH SERIAL CABLE. -
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** NEXT ISSUE OUT EARLY MAY **

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